PRECIOUS STONE CUT AND METHOD OF MAKING

FIELD OF THE INVENTION

[001] Generally the present invention relates to a cut precious stone and a method for cutting a precious stone. More particularly the method for cutting and the cut of the present invention produces a precious stone with more brilliance, scintillation, and light dispersion.

BACKGROUND OF THE INVENTION

[002] Traditionally, gemstones have been cut in many shapes and configurations over the ages. Typically, precious stones, such as diamonds, are cut to accent high coefficients of brilliancy, scintillation, and dispersion of light. In general, gemstones, particularly diamonds, should be cut such that light entering upper portions of the stone are is totally reflected and refracted within the stone, and also emerges back through the top portion of the stone to the eye of the observer.

[003] Many different stone cuts have attempted to bring out the greatest possible life of a diamond, *i.e.,* give a diamond the most "fire" as possible. One such cut that has received much glory and admiration is the round or "brilliant" cut. The round or brilliant cut is popular for various other gemstones as well. A brilliant-cut diamond is generally a round diamond with fifty-eight sides. A girdle (the outer edge of the gem) forms a junction between a pavilion (the lower section) and a crown (the upper section) of the gemstone. The crown typically includes many flat faces, or facets, the largest typically being the table, which is substantially parallel to the girdle. The pavilion includes many facets that cover the pavilion and can extend from a lower tip of the pavilion (the culet) to the girdle or some portion thereof. The crown of a typical brilliant-cut gemstone generally includes star facets, bezel or upper main facets , and upper girdle facets, while the pavilion generally includes pavilion main facets and lower girdle facets.

[004] Many gemstone cuts vary with respect to which facets are cut onto the gemstone and which are emphasized on the particular gemstone cut. It has become generally accepted that the more facets a gemstone has, the more brilliance, scintillation, and light dispersion the gemstone will portray, up to a point where the gemstone becomes too busy. The goal of a gemstone cut is to prevent leakage of incident light through the bottom portion of the gemstone and to manage external and internal light flow to maximize the return of white and color through the top of the gemstone. The traditional round

brilliant cut model, due its unique faceting arrangements, has limited ability to return white light significantly. This results in the general observation of a dark tone appearance with the round brilliant cut diamond. The dark tone appears even with diamonds that are cut to very perfect proportions having very white body color. This observation becomes even more pronounced with round brilliant cut diamonds that are cut to less than ideal proportions where leakage of light is significant. The loss of light through the bottom of the diamond creates dead zones.

[005] Furthermore, due to the light return and internal light flow efficiencies of the round brilliant cut model, the proportions that are necessary for this model to achieve optimal light performance requires extraordinary loss of rough diamond material during the cutting process. Although, at the optimal light performance level for the traditional model, the diamond appears more impressive than the poorly cut diamonds, the magnitude and quality of brilliance, dispersion and scintillation that a round shape diamond cut is capable of achieving is not maximized. Nonetheless, the current desire of many cutters to cut diamonds to the ideal cut proportions of the traditional round brilliant cut is discouraged by the requirements of significant weight loss of the rough diamond material. This provides one explanation for the high numbers of round brilliant diamonds with poorly cut proportions that are produced every year.

[006] Therefore, it would be advantageous to cut a gemstone, such as a diamond, with proportions that prevent light leakage and with a faceting arrangement that is more efficient and effective in returning more white light, color light, and scintillation. Also, it would be more advantageous to provide a faceting arrangement that can harmonize and properly balance the gemstone's key components of light performance, its brilliance, dispersion, and scintillation. Thereby, a higher level of visual and aesthetic beauty would be provided to the gemstone. A faceting arrangement that improves the total light return efficiency of the diamond by changing the pathway which light travels within the diamond would also be advantageous. Thereby, the weight loss during cutting would be significantly reduced. Overall, it would be desirable to produce a gemstone with a faceting arrangement that returns more brilliance, fire (dispersion), and scintillation, and that appears lighter and that can be cut with less weight loss to achieve a greater light performance than the traditional model.

SUMMARY OF THE INVENTION

[007] The present invention provides a stone cut and a method for cutting a stone providing increased scintillation, brilliance, and dispersion of light. The cut, in accordance with one aspect of the invention, has a girdle, crown, and pavilion, and includes an increased number of facets on either or both the crown or the pavilion over the traditional number facets. The increased number of facets may be obtained by providing additional upper girdle facets (over the traditional number) surrounding the perimeter of the stone above the girdle. According to an embodiment, the upper girdle facets preferably extend from a lower side along the girdle of the stone to a common upper vertex located toward a table on the crown. Preferably, there are three upper girdle facets per side of the table.

[008] According to another embodiment, the increased number of facets may be obtained by providing additional lower girdle facets (over the traditional number) on the pavilion of the stone. The increased number of facets on the pavilion portion results from an increase in the number of lower girdle facets. Preferably, the lower girdle facets are positioned between each pair of pavilion main facets and extend from an upper side along a girdle of the stone to a portion of the pavilion. Also preferably, there are three lower girdle facets between each pavilion main facet.

[009] In accordance with another aspect of the present invention, the pavilion main facets, on the pavilion of the stone extending upwards from the culet, vary in thickness. The pavilion main facets can alternate in thickness between thick and thin. In one embodiment,, the thick pavilion main facets are about 50 percent thicker than the thin pavilion main facets.

[0010] According to yet another embodiment of the present invention, one of the lower girdle facets is rotated about an axis.

[0011] These and other features and advantages of the present invention will be readily apparent from the following detailed description of the invention, the scope of the invention being set out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The detailed description will be better understood in conjunction with the accompanying drawings, wherein like reference characters represent like elements, as follows:

[0013] FIG. 1 shows a top plan view of an embodiment of a stone cut according to an embodiment of the present invention;

[0014] FIG. 2 shows a bottom view of a stone according to an embodiment of the present invention;

[0015] FIG. 3 shows a side view of a stone having a crown as in FIG. 1 and a pavilion as in FIG. 2;

[0016] FIG. 4 shows angles and dimensions of a stone as in FIG. 3;

[0017] FIG. 5 shows a top view of another embodiment of a stone cut according to another embodiment of the present invention;

[0018] FIG. 6 shows a bottom view of a stone as in FIG. 5;

[0019] FIG. 7 shows a bottom view of a stone cut according to another embodiment of the present invention; and

[0020] FIG. 8 shows a top view of a stone cut as in FIG. 7.

DETAILED DESCRIPTION OF THE INVENTION

[0021] According to FIGS. 1-3, stone **10**, such as a diamond, cut according to an embodiment of the present invention, is generally similar to a brilliant-cut diamond. Stone **10** has a generally round shape, when viewed from the top downward or bottom upward, and a generally pyramidal shape when viewed from the side. Stone **10** generally has girdle **60** defining the outer edge and widest portion of stone **10** in a top downward or bottom upward view; crown **40** defining the upper portion above girdle **60**; pavilion **80** defining the lower portion below girdle **60**; and culet **20** defining the lowest portion of pavilion **80**. For purposes of explanation, features of stone **10** will be referenced with respect to central axis **12** that extends from culet **20** (FIG. 3), at a lower portion of stone **10**, through the center of table **102**, as represented by the dashed line **12** of FIG. 3. Furthermore, the outer edge of stone **10**, girdle **60**, will be referred to as the periphery of stone **10**.

[0022] FIG. 1 shows a top view of an embodiment of stone **10** cut with many flat faces, or facets, on crown **40**. For example, according to one embodiment, crown **40** has fifty-one (51) facets. The largest facet on crown **40** is table **102**. According to the embodiment of FIG. 1, table **102** has a ten sided configuration or a decagon shape with ten vertices adjoining adjacent sides of the decagon. However, table **102** may have fewer or more sides instead.

[0023] Each side of table **102** of FIG. 1 forms one side of a substantially triangular shaped star facet **104**. Adjacent star facets **104** adjoin at vertices nearest table **102**, thereby encircling table **102** with a ring of star facets **104**. Also located on crown **40** are ten upper main or bezel facets **106**. Bezel facets **106** are substantially kite shaped with four sides or edges and four vertices. It is preferred that an axially center-most upper vertex **V1** of each of bezel facets **106** adjoins table **102** at the point where vertices of adjacent star facets **104** adjoin table **102** and each other. It is also preferable that the axially center-most lower vertex **V2** of each of bezel facets **106** extends to girdle **60**. Therefore, one set of opposed upper and lower vertices **V1** and **V2** of each of bezel facets **106** extends between girdle **60** and table **102**, while circumferentially adjoining lateral vertices **V3** and **V4** of bezel facets **106** adjoin with the lower-most vertex of star facets **104**.

[0024] The remaining surface area of crown **40** is occupied by upper girdle facets **110, 112,** and **114**. Upper girdle facets **110, 112,** and **114** are positioned around the periphery of crown **40** between the lower-most vertices **V2** of adjacent bezel facets **106** and with a bottom side along girdle **60**. Traditionally, there are two upper girdle facets positioned between each adjacent pair of bezel facets **106**. However, in accordance with the principles of the present invention, the embodiment of FIG. 1 has three upper girdle facets **110, 112,** and **114** between each adjacent pair of bezel facets **106**. Upper girdle facets **110, 112,** and **114** extend from girdle **60** to a common vertex **120,** extending towards table **102** and which adjoins the lower-most vertex of star facet **104** and the adjoining lateral vertices, **V3** and **V4**, of bezel facets **106**. The inclusion of a third upper girdle facet **114** between each pair of bezel facets **106** increases the scintillation and light dispersion of stone **10**. Moreover, the additional upper girdle facet provides a crown of a round-shaped diamond with an additional set of facets typically equal to the number of sides of the polygonal-shaped table **102** of stone **10**. For example, as shown in FIG. 1, when table **102** is in the shape of a decagon, ten extra facets are incorporated onto crown **40** of stone **10** by configuring three upper girdle facets **110, 112,** and **114** (*i.e.*, by providing an extra girdle facet) between each pair of bezel facets **106**. Therefore, according to this embodiment, a total of fifty-one (51) facets are provided on the crown of a stone **10** with a decagon-shaped table **102**. This is roughly a twenty-five percent increase in the number of crown facets over a traditional round stone with a decagon-shaped table **102**.

[0025] FIG. 2 is a bottom view of a stone **10** showing pavilion **80**. Generally, there are pavilion main facets **202**, lower girdle facets **220, 222,** and **224,** and a culet **20** on the

pavilion of stone **10**. The pavilion main facets **202** are configured substantially in a kite shape with a lower vertex on culet **20** and an upper vertex on girdle **60**. According to an embodiment, the upper vertex of pavilion main facets **202** terminates at girdle **60** in alignment with the lower-most vertex of corresponding bezel facets **106**.

[0026] Culet **20** can be a point, as shown in the Figures, or a planar polygonal surface with a number of sides equal to and determined by the number of pavilion main facets **202**. A planar polygonal culet surface is formed by providing a facet instead of a point for culet **20**. The culet facet may also mimic the configuration of table **102**, thereby taking on as many sides as that of table **102**, only in a reduced size. Accordingly, in the embodiment of FIG. 2, culet **20**, if cut to be a facet instead of a point, would be a decagon because pavilion **80** has ten pavilion main facets **202**.

[0027] Lower girdle facets **220, 222,** and **224** have a top side along girdle **60** and a lower vertex extending toward culet **20**. Although traditionally there are only two lower girdle facets between adjacent pavilion main facets **202** on a round diamond, in the embodiment of FIG. 2 there are three lower girdle facets **220, 222,** and **224** on pavilion **80** between each pair of adjacent pavilion main facets **202**. A first lower girdle facet **220** has one side in common with a side of a first pavilion main facet **202** and another side in common with a side of a third lower girdle facet **224**. Additionally, a second lower girdle facet **222** has one side in common with a side of a second pavilion main facet **202** (adjacent the first pavilion main facet) and another side in common with a second side of the third lower girdle facet **224**. The additional lower girdle facet increases the scintillation and dispersion of stone **10.**

[0028] According to another embodiment of the present invention, a lower girdle facet is rotated clockwise or counterclockwise about an axis extending from culet **20** to girdle **60** and preferably (though not necessarily) lying in the plane of the lower girdle facet such that the facet is not tangent to a common imaginary general circumference of stone **10** about which the other lower girdle facets lie and to which the other lower girdle facets are tangent. Therefore, generally a micro-facet (not shown) is created between the edges of the rotated lower girdle facet and its neighboring facets. According to a preferred embodiment, the lower girdle facet is rotated at least about 0 degrees and at most about 10 degrees. It is more preferred that the lower girdle facet is rotated at least about 0 degrees and at most about 4 degrees. However, as will be appreciated by one of ordinary skill in the art, the

angle of rotation may vary from such preferred minimum and maximum values if the desired improved scintillation and light dispersion is nonetheless achieved.

[0029] For example, if lower girdle facet **224** (FIG. 2) is rotated clockwise about an axis extending from culet **20** to girdle **60** (FIG. 3) and where the axis lies along the common edge of lower girdle facets **220** and **224**, the adjacent edges of lower girdle facet **224** and lower girdle facet **222** are not coextensive. Accordingly, a new micro-facet (not shown) is created between adjacent edges of lower girdle facets **222** and **224**, respectively. Additionally, a tapered micro-facet (not shown) is also created between lower girdle facet **224** and girdle **60**. This tapered micro-facet would begin at the upper left edge of lower girdle facet **224** at girdle **60** and expand along girdle **60** to a maximum width at the right edge of lower girdle facet **224** bordering lower girdle facet **222**.

[0030] Likewise, lower girdle facet **224** could be rotated counterclockwise about an axis extending from culet **20** to girdle **60** and preferably (though not necessarily) lying in the plane of the lower girdle facet **224**, creating a micro-facet between the respective edges of lower girdle facet **224** and lower girdle facet **220**. Furthermore, lower girdle facet **224** can be rotated clockwise or counterclockwise about an axis parallel to girdle **60**. In this respect, rotating the lower girdle facet **224** clockwise about an axis that is parallel to girdle **60** and that extends from left to right causes a slight flattening of the corner of the lower girdle facet that intrude into the general diameter of stone **10** along the left and right edges of lower girdle facet **224** with lower girdle facets **220** and **222**, respectively. Moreover, lower girdle facet **224** may be rotated about an axis located at some point between adjoining edges of lower girdle facet **220** and lower girdle facet **224**, and adjoining edges of lower girdle facet **222** and lower girdle facet **224**, thereby creating micro-facets around the perimeter of lower girdle facet **224**.

[0031] It will be appreciated by one of ordinary skill in the art that each lower girdle facet of stone **10** can be rotated in the same direction and at the same degree or each lower girdle facet of stone **10** can be rotated in different directions and/or degrees. Furthermore, the axis of rotation can be directed in any orientation.

[0032] A stone in accordance with the principles of the present invention may have a crown **40** as in FIG. 1 or a pavilion **80** as in FIG. 2, or both, as in FIG. 3. Thus, an additional upper girdle facet may be provided between each bezel facet **106** of a round cut stone, without altering the traditional number of lower girdle facets. Similarly, an additional lower girdle facet may be provided between each pavilion main facet **202** of a

round cut stone, without altering the traditional number of upper girdle facets. Or, additional upper girdle facets, as in FIG. 1, and additional lower girdle facets, as in FIG. 2, may be provided on the same stone **10**.

[0033] From a side perspective view of a stone with additional upper girdle facets and lower girdle facets, such as in FIG. 3, the combination of upper girdle facets **110, 112,** and **114**, and lower girdle facets **220, 222,** and **224** form a substantially smaller kite-shaped facet within a larger kite-shaped facet. In particular, the girdle sides of upper girdle facets **110, 112,** and **114** are adjacent the girdle sides of lower girdle facets **220, 222, 224,** respectively, of pavilion **80**. Upper girdle facets **110** and **112** and lower girdle facets **220** and **222** form what appears to be a larger kite-shaped facet with a smaller kite shaped facet therein, formed by the combination of the additional upper girdle facet **114** and the additional lower girdle facet **224**, as illustrated in FIG. 3.

[0034] Exemplary preferred measurements of a stone **10** cut as in FIG. 3 are provided in FIG. 4, where the dimensions are given as a percentage of the width or diameter **L** of stone **10**. There are a number of different standards for an "ideal cut" diamond according to the American Gem Society (AGS) and Gemological Institute of America (GIA). However, due to the increased number of upper and or lower girdle facets of the present invention, stone **10** can deviate from the "ideal cut" standard set by these reputable organizations and exceed the visual equivalent and/or benefits of an "ideal cut" stone. In accordance with this deviation, girdle **60** has a preferred thickness **T**, between crown **40** and pavilion **80** of at least about 0.50 percent and at most about 4 percent of the total diameter **L** of stone **10**. In a more preferred embodiment, girdle **60** has a thickness **T** of at least about 0.50 percent and at most about 2.95 percent of the total diameter **L** of stone **10**. Table **102** has a cross-section width **L1** of not less-than about 50 percent and not more-than about 66 percent of the diameter **L** of stone **10**. It is more preferred that table **102** has a cross-section width **L1** of not less-than about 52 percent and not more-than about 60 percent of the diameter **L** of stone **10** at girdle **60**. Angle θ_1, between the horizontal or girdle **60** and the side of crown **40**, is not less-than about 30 degrees and not more-than about 37 degrees. In a more preferred embodiment, angle θ_1 is not less-than about 33.7 degrees and not more than about 35.8 degrees. Angle θ_2, between the horizontal or girdle **60** and a side of pavilion **80**, is at least about 39 degrees and at most about 43 degrees. More preferably, angle θ_2 is not at least about 40.5 degrees and at most about 41.5 degrees. Crown height **H1** is at least about 11 percent and at most about 18 percent of the total diameter **L** of stone **10**.

More preferably, crown height **H1** is at least about 14 percent and at most about 16.5 percent of the total diameter **L** of stone **10**. Pavilion depth, as indicated by **H2,** is preferably not less-than about 40 percent and not more-than about 46 percent of total diameter **L** of stone **10**. It is more preferable that pavilion depth **H2** is not less-than about 42.2 percent and not more-than about 43.8 percent of total diameter **L** of stone **10**.

[0035] According to an alternate embodiment, as shown in FIG. 5, crown **40** is in the shape of a twelve sided polygon, *i.e.*, is a dodecagon-shaped table **502**. Abutting each side of dodecagon-shaped table **502** are star facets **504**. Adjacent star facets **504** encircle dodecagon table **502** with adjacent star facets **504** adjoined at lateral vertices. Because star facets **504** extend from a side of dodecagon-shaped table **502**, there is an equal number of star facets **504** as sides of dodecagon-shaped table **502**, or twelve star facets **504**. Additionally, there is a substantially kite shaped bezel facet **506** extending from each vertex **V** of dodecagon-shaped table **502** and terminating at girdle **60**. Two or three upper girdle facets **510, 512, 514** may be provided between the lower portion of each bezel facets **506**. Furthermore, as shown in FIG. 6, there preferably are an equivalent number of pavilion main facets **602** extending from culet **604** toward and terminating at girdle **60**. Pavilion main facets **602** are substantially kite shaped. Located between each adjacent pair of pavilion main facets **602** may be two or three lower girdle facets **606, 608,** and **610**. It will be appreciated by one of ordinary skill in the art that placing a twelve sided table or twelve pavilion main facets on a stone may only be appropriate for a stone of certain size, *i.e.*, a quarter of a carat or more, because a small stone may become too busy and, thus, take away from the effectiveness of the cut.

[0036] As will be appreciated by one of ordinary skill in the art, the number of sides of the polygon shape of the table of a stone cut in accordance with the principles of the present invention can be altered without changing the scope of the present invention. Generally, fewer than eight sides on the polygonal table does not provide the desired scintillation, and more than twelve sides on the polygonal table generally result in a diamond that is too "busy". Similar principles are true for the associated crown and pavilion facets. However, depending on the size and quality of the initial stone, the number of polygonal sides of the table and other crown and pavilion facets may be altered. Thus, fewer or more sides on the table and/or facets on the stone are nonetheless within the scope of the present invention

[0037] According to another embodiment of the present invention, as shown in FIGS. 7 and 8, an exemplary stone **800,** shown cut to be a precious gem, has pavilion main facets **870** that alternate in thickness. Generally, stone **800** has a table **802,** which is the largest facet on the crown on stone **800,** the table **802** preferably having the same number of sides as the number of pavilion main facets **870.**

[0038] FIG. 7 shows a pavilion portion of stone **800.** The pavilion portion has a culet **850** at a bottom-most point. In an alternative embodiment, culet **850** could be a facet instead of a point, as described above. Substantially kite-shaped pavilion main facets **870** extend from culet **850** to girdle **860.** Pavilion main facets **870** vary in width. It is preferred that a first pavilion main facet **872** be at least about 30 percent wider, at its widest part, than a neighboring second pavilion main facet **874** and at most about 60 percent wider than the neighboring second pavilion main facet **874.** It is more preferable that a first pavilion main facet **872** be at least about 40 percent wider than a neighboring thin pavilion main facet **874,** and at most about 50 percent wider than a neighboring thin pavilion main facet **874.** According to one exemplary embodiment, there are ten pavilion main facets **870** along the 360 around the pavilion or stone **800.** Of those ten, five have larger angles, about 42 degrees, and five have smaller angles, about 30 degrees, thus totaling 360 degrees and resulting in the alternating widths of pavilion main facets **870.** It will be appreciated by one of ordinary skill in the art that the overall size of stone **800** and the number of pavilion main facets in total on stone **800** will be determining factors in the varying width of pavilion main facets **870.** A further determining characterization for the width variation between pavilion main facets **870** is the overall reflectivity of light from stone **800.**

[0039] Alternating the width of the pavilion main facets **870** changes the internal symmetry of stone **800.** Light that enters stone **800** is reflected differently from a traditional round cut stone because of the varying width of pavilion main facets **870.** The altering width of pavilion main facets **870** produces five fold symmetry in stone **800** with a ten sided pavilion. A result of pavilion main facet width alteration is an increase in brilliance and scintillation and improved internal light flow.

[0040] According to an alternative embodiment, stone **800** can include three (rather than two, as in traditional round-cut stones) upper girdle facets **820, 822,** and **824.** Upper girdle facets **820, 822,** and **824** are positioned between adjacent bezel facets **806.** Upper girdle facets **820, 822,** and **824** extend from girdle **860** and terminate at a common vertex at adjoining lateral vertices of bezel facets **806.** Furthermore, according to yet another

alternate embodiment, stone **800** can include three (rather than two, as in traditional round-cut stones) lower girdle facets **880, 882,** and **884**. Lower girdle facets **880, 882,** and **884** are positioned between adjacent pavilion main facets **870**. Lower girdle facets **880, 882,** and **884** extend from a region on the pavilion to girdle **860**. Lower girdle facets **880, 882,** and **884** align with upper girdle facets **820, 822,** and **824**, respectively at girdle **860**.

[0041] According to another embodiment, lower girdle facets can be rotated such that the facet is not tangent to a common imaginary general circumference of stone **10** about which the other lower girdle facets lie and to which the other lower girdle facets are tangent. Lower girdle facets can be rotated counterclockwise or clockwise about an axis extending from culet **850** to girdle **860**. A lower girdle facet may also be rotated about an axis parallel to girdle **860**. Depending on the axis of rotation, rotation of a lower girdle facet generally generates a micro-facet (not shown) at the boundary between the rotated lower girdle facet and neighboring facets. The rotation of lower girdle facets is similar to rotation of lower girdle facets described above.

[0042] In yet another embodiment, as shown in FIG. 8, table **802** has ten sides, or has a decagon shape. As illustrated in FIG. 8, extending from each side of table **802** is a generally triangular-shaped star facet **804**. Star facets **804** abut each other at lateral vertices forming a ring around table **802**. Extending from each vertex of table **802** is a bezel facet **806**. Bezel facets **806** extend from table **802** to girdle **860**. Two or three upper girdle facets **820, 822, 824** may be provided between the lower portion of each of bezel facets **806**.

[0043] It will be appreciated features described above with respect to one embodiment typically may be applied to another embodiment, whether or not explicitly indicated. The various features hereinafter described may be used singly or in any combination thereof. Therefore, the present invention is not limited to only the embodiments specifically describe herein. Furthermore, the principles of this invention can be applied to other gemstone cuts without exceeding the scope of the invention as contemplated by the inventor.

[0044] The present invention also contemplates methods for forming the embodiments of the stone as described above. According to one embodiment, the method includes forming a pavilion portion having a culet and forming a crown portion having a table with a predetermined number of sides. The method also includes forming a girdle which separates the pavilion portion from the crown portion. Additionally, the method includes forming three upper girdle facets per side of the table where the upper girdle facets

extend from the girdle to a vertex at the table. Pavilion main facets are also formed with this method extending from the girdle region toward the culet region. The pavilion main facets extend from near the culet toward the girdle on the pavilion portion of the stone. According to another method, which may or may not be performed in conjunction with the above-described method, three lower girdle facets are formed on the pavilion portion of the stone. The lower girdle facets are positioned between adjacent pavilion main facets. According to another method, which may or may not be performed in conjunction with either or both of the above-described methods, the thickness of the pavilion main facets may be varied in an alternating circumferential pattern. According to yet another method, which may or may not be performed in conjunction with any, several, or all of the above-described methods, at least one lower girdle facet is rotated such that the facet is not tangent to an imaginary general circumference of the stone. The method may further include forming multiple lower girdle facets on the pavilion portion of the stone where the lower girdle facets are at multiple angles not tangent to a common imaginary general circumference of the stone.

[0045] While the foregoing description and drawings represent the preferred embodiments of the present invention, it will be understood that various additions, modifications and substitutions may be made therein without departing from the spirit and scope of the present invention as defined in the accompanying claims. In particular, it will be clear to those skilled in the art that the present invention may be embodied in other specific forms, structures, arrangements, proportions, and with other elements, materials, and components, without departing from the spirit or essential characteristics thereof. One skilled in the art will appreciate that the invention may be used with many modifications of structure, arrangement, proportions, materials, and components and otherwise, used in the practice of the invention, which are particularly adapted to specific environments and operative requirements without departing from the principles of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims, and not limited to the foregoing description.